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June 3, 2016

Via Certified Mail - Return Receipt Requested
Managing Agent
Samson Tug and Barge
7553 Detroit Ave SW
Seattle WA 98108

Kirk Miles
Samson Tug and Barge Company Inc
6361 1st Ave S
Seattle WA 98108-3228

Re: **NOTICE OF INTENT TO SUE UNDER THE CLEAN WATER ACT AND REQUEST FOR COPY OF STORMWATER POLLUTION PREVENTION PLAN**

Dear Managing Agent:

We represent Puget Soundkeeper Alliance ("Soundkeeper"), 130 Nickerson Street, Suite 107, Seattle, WA 98109, (206) 297-7002. Any response or correspondence related to this matter should be directed to Smith & Lowney at the letterhead address. This letter is to provide you with sixty days notice of Soundkeeper's intent to file a citizen suit against Samson Tug and Barge Company, Inc. ("Samson") under section 505 of the Clean Water Act ("CWA"), 33 U.S.C. § 1365, for the violations described below. This letter is also a request for a copy of the complete and current stormwater pollution prevention plan ("SWPPP") required by Samson's National Pollution Discharge Elimination System ("NPDES") permit.

Samson was granted coverage for its Detroit Ave SW facility effective September 25, 2009, under Washington's Industrial Stormwater General Permit ("ISGP") issued by the Washington Department of Ecology ("Ecology") on August 21, 2002, effective September 20, 2002, modified on December 1, 2004, reissued on August 15, 2007, effective September 15, 2007, reissued again on October 15, 2008, effective November 15, 2008, and remaining effective through December 31, 2009, under NPDES permit No. SO3011800 (the "2002 Permit"). Samson was granted coverage under the subsequent iteration of the Washington ISGP issued by Ecology on October 21, 2009, effective January 1, 2010, modified May 16, 2012, effective July 1, 2012, and remaining effective through January 1, 2015, under NPDES Permit No. WAR011800 (the "2010 Permit"). Ecology granted coverage under the current iteration of the ISGP, issued by Ecology on December 3, 2014, effective January 2, 2015, and set to expire on December 31, 2019, (the "2015 Permit") and maintains the same permit number, WAR011800.

Samson has violated and continues to violate the terms and conditions of the 2010 Permit and 2015 Permit (collectively, the "Permits") with respect to operations of, and discharges of stormwater and pollutants from, its facility, Samson Tug and Barge Co and Duwamish Marine Center located at or near 7553 Detroit Ave SW, Seattle WA 98108 (the "Facility"). The facility subject to this notice includes any contiguous or adjacent properties owned or operated by Samson.

I. COMPLIANCE WITH STANDARDS.

A. Violations of Water Quality Standards.

Condition S10.A of the Permits prohibit discharges that cause or contribute to violations of water quality standards. Water quality standards are the foundation of the CWA and Washington's efforts to protect clean water. In particular, water quality standards represent the U.S. Environmental Protection Agency ("EPA") and Ecology's determination, based on scientific studies, of the thresholds at which pollution starts to cause significant adverse effects on fish or other beneficial uses. For each water body in Washington, Ecology designates the "beneficial uses" that must be protected through the adoption of water quality standards.

A discharger must comply with both narrative and numeric water quality standards. WAC 173-201A-010; WAC 173-201A-510 ("No waste discharge permit can be issued that causes or contributes to a violation of water quality criteria, except as provided for in this chapter."). Narrative water quality standards provide legal mandates that supplement the numeric standards. Furthermore, narrative water quality standards apply with equal force, even when Ecology has established numeric water quality standards. Specifically, Condition S10.A of the Permits require Samson's discharges not cause or contribute to violations of Washington State's water quality standards.

Samson discharges stormwater a surface waterbody and wetland that drains into the Duwamish Waterway. Samson discharges stormwater that contains elevated levels of copper, zinc, and turbidity as indicated in the tables of discharge monitoring data below. Further, the data provided in the tables below represent samples collected from only one of Samson's discharge points. Discharges of stormwater and/or wastewater from the facility cause and/or contribute to violations of water quality standards for zinc, copper and turbidity and have occurred each and every day during the last five years on which there was 0.1 inch or more of precipitation, and continue to occur. These water quality standards include those set forth in WAC 173-201A-200(1)(e), -240, and -260(2). Precipitation data from the last five years are appended to this notice of intent to sue and identify days when precipitation met or exceed 0.1 inches per day.

	TABLE 1: DISCHARGE MONITORING REPORT ("DMR") DATA FOR SAMSON DETROIT AVE FACILITY OUTFALL 1 (SW 1)						
Quarter in which sample collected	Turbidity (Benchmark 25 NTU)	pH (Benchmark 5-9 su)	Zinc (Benchmark 117 µg/L)	Oil Sheen (Y/N)	Copper (Benchmark 14 µg/L)	Diesel NWTPHDx (Benchmark <= 10 mg/L)	Notes
1Q 2010							ND
2Q 2010							ND
3Q2010							ND
4Q 2010							No DMR
1Q 2011							No DMR
2Q 2011	**1293.4**	7.5	**2310**	N	**723**		
3Q 2011							ND
4Q 2011							ND
1Q 2012							ND
2Q 2012							No DMR
3Q 2012							ND
4Q 2012							ND
1Q 2013							ND
2Q 2013							ND
3Q 2013							ND
4Q 2013							ND
1Q 2014							ND
2Q 2014							ND
3Q 2014	**453**	7.9	**981**	N	**140**		
4Q 2014	**391**	8.2	**1490**	N	**259**		
1Q 2015	**1230**	7.3	**1010**	N	**354**	.168	
2Q 2015							No DMR
3Q2015	**318**	8.1	**908**	N	**402**	.439	

Key: Bold = benchmark exceedances; "ND" = Reported No Discharge; "NC" = Analysis not conducted.

	TABLE 2: DISCHARGE MONITORING REPORT ("DMR") DATA FOR SAMSON DETROIT AVE FACILITY OUTFALL 2 (SW 2)						
Quarter in which sample collected	Turbidity (Benchmark 25 NTU)	pH (Benchmark 5-9 su)	Zinc (Benchmark 117 µg/L)	Oil Sheen (Y/N)	Copper (Benchmark 14 µg/L)	Diesel NWTPHDx (Benchmark <= 10 mg/L)	Notes
1Q 2010							No DMR
2Q 2010							No DMR
3Q2010							No DMR
4Q 2010	**106.7**	6.5	**214**	N	**44.4**		
1Q 2011	**1029.4**	6.5	**669**	N	**143**		
2Q 2011	**842.8**		**650**		**116**		
3Q 2011							No DMR
4Q 2011							No DMR
1Q 2012							No DMR
2Q 2012							No DMR
3Q 2012							No DMR
4Q 2012							No DMR
1Q 2013							No DMR
2Q 2013							No DMR
3Q 2013							No DMR
4Q 2013							No DMR
1Q 2014							No DMR
2Q 2014							No DMR
3Q 2014							No DMR
4Q 2014							No DMR
1Q 2015							No DMR
2Q 2015							No DMR
3Q2015							No DMR

Key: Bold = benchmark exceedances; "ND" = Reported No Discharge; "NC" = Analysis not conducted.

B. Compliance with Standards.

Condition S10.C of the Permits requires Samson to apply all known and reasonable methods of prevention, control and treatment ("AKART") to all discharges, including preparing and implementing an adequate SWPPP and best management practices ("BMPs"). Samson has violated and continues to violate these conditions by failing to apply AKART to its discharges by, among other things, failing to implement an adequate SWPPP and BMPs as evidenced by the elevated levels of pollutants in its discharge. *See* Tables 1 and 2; Section II. These violations have occurred on each and every day for the previous five years and continue to occur every day.

Condition S1.A of the Permits require that all discharges and activities authorized be consistent with the terms and conditions of the permit. Samson has violated this condition by discharging and acting inconsistent with the conditions of the Permits as described in this Notice of Intent to Sue.

II. STORMWATER POLLUTION PREVENTION PLAN VIOLATIONS.

Samson has not developed and implemented a SWPPP that complies with the requirements of the Permits. In the following section, upon information and belief, Soundkeeper asserts that the SWPPP and its implementation violate the Permits as follows.

Condition S3.A.1 of the Permits require Samson to develop and implement a SWPPP as specified in these permits. Condition S3.A.2 of the Permits require the SWPPP to specify BMPs necessary to provide AKART and ensure that discharges do not cause or contribute to violations of water quality standards. On information and belief, Samson has violated these requirements of the Permits each and every day during the last five years and continues to violate them as it has failed to prepare and/or implement a SWPPP that includes AKART and BMPs necessary to comply with state water quality standards.

Condition S3.A of the Permits require Samson to have and implement a SWPPP that is consistent with permit requirements, fully implemented as directed by permit conditions, and updated as necessary to maintain compliance with permit conditions. On information and belief, Samson has violated these requirements of the Permits each and every day during the last five years and continues to violate them because its SWPPP is not consistent with permit requirements, is not fully implemented, and has not been updated as necessary.

The SWPPP fails to satisfy the requirements of Condition S3 of the Permits because it does not adequately describe BMPs. Condition S3.B.4 of the Permits requires that the SWPPP include a description of the BMPs that are necessary for the facility to eliminate or reduce the potential to contaminate stormwater. Condition S3.B.4 of the 2015 Permit requires that the SWPPP detail how and where the selected BMPs will be implemented. Condition S3.A.3 of the Permits requires that the SWPPP include BMPs consistent with approved stormwater technical manuals or document how stormwater BMPs included in the SWPPP are demonstratively equivalent to the practices contained in the approved stormwater technical manuals, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs. Samson's SWPPP does not comply with these requirements because it does not adequately describe and explain in detail the BMPs selected, does not include BMPs consistent with approved stormwater technical manuals, and does not include BMPs that are demonstratively equivalent to such BMPs with documentation of BMP adequacy.

Samson's SWPPP fails to satisfy the requirements of Condition S3.B.2 of the Permits because it fails to include a facility assessment. The SWPPP fails to include an adequate facility assessment because it does not describe the industrial activities conducted at the site, the general layout of the facility including buildings and storage of raw materials, the flow of goods and materials through the facility, the regular business hours, and the seasonal variations in business hours or in industrial activities.

Samson's SWPPP fails to satisfy the requirements of Condition S3.B.1 of the Permits because it does not include a site map that identifies significant features, the stormwater drainage and discharge structures, the stormwater drainage areas for each stormwater discharge point off-site, a unique identifying number for each discharge point, each sampling location with a unique identifying number, paved areas and buildings, areas of pollutant contact associated with specific industrial activities, conditionally approved non-stormwater discharges, surface water locations, areas of existing and potential soil erosion, vehicle maintenance areas, and lands and waters adjacent to the site that may be helpful in identifying discharge points or drainage routes.

Samson's SWPPP fails to comply with Condition S3.B.2.b of the Permits because it does not include an inventory of industrial activities that identifies all areas associated with industrial activities that have been or may potentially be sources of pollutants. The SWPPP does not identify all areas associated with loading and unloading of dry bulk materials or liquids, outdoor storage of materials or products, outdoor manufacturing and processing, onsite dust or particulate generating processes, on-site waste treatment, storage, or disposal, vehicle and equipment fueling, maintenance, and/or cleaning, roofs or other surfaces exposed to air emissions from a manufacturing building or a process area, and roofs or other surfaces composed of materials that may be mobilized by stormwater as required by these permit conditions.

Samson's SWPPP does not comply with Condition S3.B.2.c of the Permits because it does not include an adequate inventory of materials. The SWPPP does not include an inventory of materials that lists the types of materials handled at the site that potentially may be exposed to precipitation or runoff and that could result in stormwater pollution, a short narrative for each material describing the potential for the pollutants to be present in stormwater discharge that is updated when data becomes available to verify the presence or absence of the pollutants, a narrative description of any potential sources of pollutants from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to stormwater as required. The SWPPP does not include the method and location of on-site storage or disposal of such materials and a list of significant spills and significant leaks of toxic or hazardous pollutants as these permit conditions require.

Samson's SWPPP does not comply with Condition S3.B.3 of the Permits because it does not identify specific individuals by name or title whose responsibilities include SWPPP development, implementation, maintenance and modification.

Condition S3.B.4 of the Permits requires that permittees include in their SWPPPs and implement certain mandatory BMPs unless site conditions render the BMP unnecessary, infeasible, or an alternative and equally effective BMP are provided. Samson is in violation of this requirement because it has failed to include in its SWPPP and implement the mandatory BMPs of the Permits.

Samson's SWPPP does not comply with Condition S3.B.4.b.i of the Permits because it does not include required operational source control BMPs in the following categories: good

housekeeping (including definition of ongoing maintenance and cleanup of areas that may contribute pollutants to stormwater discharges, and a schedule/frequency for each housekeeping task); preventive maintenance (including BMPs to inspect and maintain stormwater drainage and treatment facilities, source controls, treatment systems, and plant equipment and systems, and the schedule/frequency for each task); spill prevention and emergency cleanup plan (including BMPs to prevent spills that can contaminate stormwater, for material handling procedures, storage requirements, cleanup equipment and procedures, and spill logs); employee training (including an overview of what is in the SWPPP, how employees make a difference in complying with the SWPPP, spill response procedures, good housekeeping, maintenance requirements, material management practices, how training will be conducted, the frequency/schedule of training, and a log of the dates on which specific employees received training); inspections and recordkeeping (including documentation of procedures to ensure compliance with permit requirements for inspections and recordkeeping, including identification of personnel who conduct inspections, provision of a tracking or follow-up procedure to ensure that a report is prepared and appropriate action taken in response to visual monitoring, definition of how Samson will comply with signature and record retention requirements, certification of compliance with the SWPPP and Permit, and all inspection reports completed by Samson).

Samson's SWPPP does not comply with Condition S3.B.4.b.i.7 of the Permits because it does not include measures to identify and eliminate the discharge of process wastewater, domestic wastewater, noncontact cooling water, and other illicit discharges to stormwater sewers, or to surface waters and ground waters of the state.

Samson's SWPPP does not comply with Condition S3.B.4.b.ii of the Permits because it does not include required structural source control BMPs to minimize the exposure of manufacturing, processing, and material storage areas to rain, snow, snowmelt, and runoff. Samson's SWPPP does not comply with Condition S3.B.4.b.iii of the Permits because it does not include treatment BMPs as required.

Samson's SWPPP fails to comply with Condition S3.B.4.b.v of the Permits because it does not include BMPs to prevent the erosion of soils or other earthen materials and prevent off-site sedimentation and violations of water quality standards.

Samson's SWPPP fails to satisfy the requirements of Condition S3.B.5 of the Permits because it fails to include a stormwater sampling plan as required. The SWPPP does not include a sampling plan that identifies points of discharge to surface waters, storm sewers, or discrete ground water infiltration locations, documents why each discharge point is not sampled, identifies each sampling point by its unique identifying number, identifies staff responsible for conducting stormwater sampling, specifies procedures for sampling collection and handling, specifies procedures for sending samples to the a laboratory, identifies parameters for analysis, holding times and preservatives, laboratory quantization levels, and analytical methods, and that specifies the procedure for submitting the results to Ecology.

III. MONITORING AND REPORTING VIOLATIONS.

A. Failure to Collect Quarterly Samples.

Condition S4.B of the Permits require Samson to collect a sample of its stormwater discharge once during every calendar quarter. Conditions S3.B.5.b and S4.B.2.c of the Permits require Samson to collect stormwater samples at each distinct point of discharge offsite except for substantially identical outfalls, in which case only one of the substantially identical outfalls must be sampled. Discharge points may include, but are not limited to drains, piers, docks, loading areas, and fueling areas where industrial activities occur. Conditions S3.B.5.b and S4.B.2.c set forth sample collection criteria, but require the collection of a sample even if the criteria cannot be met.

Samson violated these requirements by failing to collect stormwater samples at any one of its discharge points during the following quarters:

1st Quarter 2010
2nd Quarter 2010
3rd Quarter 2010
4th Quarter 2010
1st Quarter 2011
3rd Quarter 2011
4th Quarter 2011
1st Quarter 2012
2nd Quarter 2012
3rd Quarter 2012
4th Quarter 2012
1st Quarter 2013
2nd Quarter 2013
3rd Quarter 2013
4th Quarter 2013
1st Quarter 2014
2nd Quarter 2014
3rd Quarter 2014
4th Quarter 2014
1st Quarter 2015
2nd Quarter 2015
3rd Quarter 2015
4th Quarter 2015
1st Quarter 2016

These violations have occurred and continue to occur each and every quarter during the last five years that Samson was and is required to sample its stormwater discharges, including the quarters in which it collected stormwater discharge samples from some, but not all, points of discharge. These violations will continue until Samson commences monitoring all distinct points of discharge and taking representative samples.

B. Failure to Analyze Quarterly Samples.

Conditions S5.A.1 and S5.B.1 of the Permits requires Samson to analyze stormwater samples collected quarterly for turbidity, pH, total copper, total zinc, oil sheen, and petroleum hydrocarbons (NWTPHDx).

Samson violated these conditions by failing to analyze stormwater samples from each distinct discharge point for any of the required parameters during the following quarters as further specified in tables 1 and 2 above:

1st Quarter 2010
2nd Quarter 2010
3rd Quarter 2010
4th Quarter 2010
1st Quarter 2011
3rd Quarter 2011
4th Quarter 2011
1st Quarter 2012
2nd Quarter 2012
3rd Quarter 2012
4th Quarter 2012
1st Quarter 2013
2nd Quarter 2013
3rd Quarter 2013
4th Quarter 2013
1st Quarter 2014
2nd Quarter 2014
3rd Quarter 2014
4th Quarter 2014
1st Quarter 2015
2nd Quarter 2015
3rd Quarter 2015
4th Quarter 2015
1st Quarter 2016

C. Failure to Timely Submit Discharge Monitoring Reports.

Condition S9.A of the Permits require Samson to use DMR forms provided or approved by Ecology to summarize, report and submit monitoring data to Ecology. For each monitoring period (calendar quarter) a DMR must be completed and submitted to Ecology not later than 45 days after the end of the monitoring period. Samson has violated these conditions by failing to timely submit a DMR within the time prescribed for the following quarters:

1st Quarter 2010
2nd Quarter 2010
3rd Quarter 2010

4th Quarter 2010
1st Quarter 2011
3rd Quarter 2011
4th Quarter 2011
1st Quarter 2012
2nd Quarter 2012
3rd Quarter 2012
4th Quarter 2012
1st Quarter 2013
2nd Quarter 2013
3rd Quarter 2013
4th Quarter 2013
1st Quarter 2014
2nd Quarter 2014
3rd Quarter 2014
4th Quarter 2014
1st Quarter 2015
2nd Quarter 2015
3rd Quarter 2015
4th Quarter 2015
1st Quarter 2016

D. Failure to Comply with Visual Monitoring Requirements.

Condition S7.A of the Permits requires that monthly visual inspections be conducted at the facility by qualified personnel. Each inspection is to include observations made at stormwater sampling locations and areas where stormwater associated with industrial activity is discharged, observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharges, observations for the presence of illicit discharges, a verification that the descriptions of potential pollutant sources required by the permit are accurate, a verification that the site map in the SWPPP reflects current conditions, and an assessment of all BMPs that have been implemented (noting the effectiveness of the BMPs inspected, the locations of BMPs that need maintenance, the reason maintenance is needed and a schedule for maintenance, and locations where additional or different BMPs are needed).

Condition S7.C of the Permits requires that Samson record the results of each inspection in an inspection report or checklist that is maintained on-site and that documents the observations, verifications, and assessments required. The report/checklist must include the time and date of the inspection, the locations inspected, a statement that, in the judgment of the person conducting the inspection and the responsible corporate officer, the facility is either in compliance or out of compliance with the SWPPP and the Permits, a summary report and schedule of implementation of the remedial actions that Samson plans to take if the site inspection indicates that the facility is out of compliance, the name, title, signature and certification of the person conducting the facility inspection, and a certification and signature of the responsible corporate officer or a duly authorized representative.

Samson is in violation of these requirements of Condition S7 of the Permits because, during the last five years, it has failed to conduct each of the requisite visual monitoring and inspections, failed to prepare and maintain the requisite inspection reports or checklists for each visual monitoring and inspection, and failed to make the requisite certifications and summaries for each visual monitoring and inspection.

IV. CORRECTIVE ACTION VIOLATIONS.

A. Violations of the Level One Requirements of the Permits.

Condition S8.B of the Permits requires Samson take specified actions, called a "Level One Corrective Action," each time quarterly stormwater sample results exceed a benchmark value or are outside the benchmark range for pH. Condition S8.A of the 2015 Permit requires that Samson implement any Level One Corrective Action required by the 2010 Permit.

As described by Condition S8.B of the Permits, a Level One Corrective Action requires Samson: (1) review the SWPPP for the facility and ensure that it fully complies with Condition S3 of the 2010 Permit and contains the correct BMPs from the applicable Stormwater Management Manual; (2) make appropriate revisions to the SWPPP to include additional operational source control BMPs with the goal of achieving the applicable benchmark values in future discharges and sign and certify the revised SWPPP in accordance with Condition S3.A.6 of the 2010 Permit; and (3) summarize the Level One Corrective Action in the Annual Report required under Condition S9.B of the Permits. Condition S8.B.4 of the Permits requires that Samson implement the revised SWPPP as soon as possible, and no later than the DMR due date for the quarter the benchmark was exceeded.

Condition S5.A and Tables 2 and 3 of the Permits establish the following benchmarks: turbidity 25 NTU; pH 5 – 9 SU; total copper 14 µg/L; total zinc 117 µg/L; and petroleum hydrocarbons (diesel fraction NWTPHDx) <=10 mg/L.

Samson has violated the requirements of the Permits described above by failing to conduct a Level One Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, the required implementation of additional BMPs, and the required summarization in the annual report each time since January 1, 2010, that quarterly stormwater sampling results were greater than a benchmark or outside the benchmark range for pH, including the benchmark excursions listed in Tables 1 and 2 in Section I.A. of this letter.

These benchmark excursions are based upon information currently available to Soundkeeper from Ecology's publicly available records. Soundkeeper provides notice of its intent to sue Samson for failing to comply with all of the Level One Corrective Action requirements described above by failing to conduct a Level One Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, the required implementation of additional BMPs, and the required summarization in the annual report each time during the last five years its quarterly stormwater sampling results were greater than a benchmark or outside the benchmark range for pH, including the benchmark excursions listed in Tables 1 and 2 above.

B. Violations of the Level Two Requirements of the Permits.

Condition S8.C of the Permits requires Samson take specified actions, called a "Level Two Corrective Action," each time quarterly stormwater sample results exceed an applicable benchmark value or are outside the benchmark range for pH for any two quarters during a calendar year. Condition S8.A of the 2015 Permit requires that Samson implement any Level Two Corrective Action required by the 2010 Permit.

As described by Condition S8.C of the Permits, a Level Two Corrective Action requires Samson: (1) review the SWPPP for the facility and ensure that it fully complies with Condition S3 of the 2010 Permit; (2) make appropriate revisions to the SWPPP to include additional structural source control BMPs with the goal of achieving the applicable benchmark value(s) in future discharges and sign and certify the revised SWPPP in accordance with Condition S3 of the Permits; and (3) summarize the Level Two Corrective Action (planned or taken) in the Annual Report required under Condition S9.B of the Permits. Condition S8.C.4 of the Permits requires that Samson implement the revised SWPPP according to Condition S3 of the Permits and the applicable stormwater management manual as soon as possible, and no later than August 31st of the following year.

The Permits establish the benchmarks applicable to Samson described in Section IV.A of this notice of intent to sue letter.

Samson has violated the requirements of the Permits described above by failing to conduct a Level Two Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, the required implementation of additional BMPs to ensure that all points of discharge from the facility meet benchmarks (not just the sampled point of discharge), including additional structural source control BMPs, and the required summarization in the annual report each time during the last five years its quarterly stormwater sampling results were greater than a benchmark or outside the benchmark range for pH for any two quarters during a calendar year. As indicated in Table 1 in Section I.A of this letter, these violations include, but are not limited to, Samson's failure to fulfill these obligations for turbidity, zinc, and copper triggered by its stormwater sampling during the calendar year of 2011 and every year since.

The benchmark excursions identified in Tables 1 and 2 of this notice of intent to sue letter are based upon information currently available to Soundkeeper from Ecology's publicly available records. Soundkeeper provides notice of its intent to sue Samson for failing to comply with all of the Level Two Corrective Action requirements each and every time quarterly stormwater sample results exceeded an applicable benchmark value or were outside the benchmark range for pH for any two quarters during a calendar year, including any such excursions that are not reflected in Tables 1 and 2 above, during the last five years.

C. Violations of the Level Three Requirements of the Permits.

Condition S8.D of the Permits requires Samson take specified actions, called a "Level Three Corrective Action," each time quarterly stormwater sample results exceed an applicable

benchmark value or are outside the benchmark range for pH for any three quarters during a calendar year. Condition S8.A of the 2015 Permit requires that Samson implement any Level Three Corrective Action required by the 2010 Permit.

As described by Condition S8.D of the Permits, a Level Three Corrective Action requires that Samson: (1) review the SWPPP for the facility and ensure that it fully complies with Condition S3 of the Permits; (2) make appropriate revisions to the SWPPP to include additional treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges and additional operational and/or structural source control BMPs if necessary for proper function and maintenance of treatment BMPs, and sign and certify the revised SWPPP in accordance with Condition S3.A.6 of the Permits; and (3) summarize the Level Three Corrective Action (planned or taken) in the Annual Report required under Condition S9.B of the Permits, including information on how monitoring, assessment, or evaluation information was (or will be) used to determine whether existing treatment BMPs will be modified/enhanced, or it new/additional treatment BMPs will be installed. Condition S8.D.2.b of the Permits requires that a licensed professional engineer, geologist, hydrogeologist, or certified professional in storm water quality must design and stamp the portion of the SWPPP that addresses stormwater treatment structures or processes.

Condition S8.D.3 of the Permits require that, before installing BMPs that require the site-specific design or sizing of structures, equipment, or processes to collect, convey, treat, reclaim, or dispose of industrial stormwater, Samson submit an engineering report, plans, and specifications, and an operations and maintenance manual to Ecology for review in accordance with chapter 173-240 of the Washington Administrative Code. The engineering report must be submitted no later than the May 15 prior to the Level Three Corrective Action Deadline. The plans and specifications and the operations and maintenance manual must be submitted to Ecology at least 30 days before construction/installation.

Condition S8.D.5 of the Permits require that Samson fully implement the revised SWPPP according to condition S3 of the Permits and the applicable stormwater management manual as soon as possible, and no later than September 30th of the following year.

The Permits establish the benchmarks applicable to Samson described in Section IV.A of this notice of intent to sue letter.

Samson has violated the requirements of the Permits described above by failing to conduct a Level Three Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, including the requirement to have a specified professional design and stamp the portion of the SWPPP pertaining to treatment, the required implementation of additional BMPs, including additional treatment BMPs to ensure that all points of discharge from the facility meet benchmarks (not just the sampled point of discharge), the required submission of an engineering report, plans, specifications, and an operations and maintenance plan, and the required summarization in the annual report each time during the last five years its quarterly stormwater sampling results were greater than a benchmark or outside the benchmark range for pH for any three quarters during a calendar year. As indicated in Table 1 in Section I.A of this letter, these violations include, but are not

limited to, Samson's failure to fulfill these obligations for turbidity, zinc, and copper triggered by its stormwater sampling during the calendar year of 2011 and again in 2015.

The benchmark excursions identified in Tables 1 and 2 of this notice of intent to sue letter are based upon information currently available to Soundkeeper from Ecology's publicly available records. Soundkeeper provides notice of its intent to sue Samson for failing to comply with all of the Level Three Corrective Action requirements each and every time quarterly stormwater sample results exceeded an applicable benchmark value or were outside the benchmark range for pH for any three quarters during a calendar year, including any such excursions that are not reflected in Tables 1 and 2 above, during the last five years.

V. VIOLATIONS OF THE ANNUAL REPORT REQUIREMENTS.

Condition S9.B of the Permits requires Samson to submit an accurate and complete annual report to Ecology no later than May 15 of each year. The annual report must include corrective action documentation as required in Condition S8.B through S8.D. If a corrective action is not yet completed at the time of submission of the annual report, Samson must describe the status of any outstanding corrective action. Specific information to be included in the annual report is identification of the conditions triggering the need for corrective action, description of the problem and identification of dates discovered, summary of any Level 1, 2, or 3 corrective actions completed during the previous calendar year, including the dates corrective actions completed, and description of the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, including identification of the date Samson expects to complete corrective actions. Samson has violated this condition by failing to include all of the required information in the annual report it submitted for the past five years.

The annual report submitted by Samson for 2010 (submitted May 13, 2011) does not include the required information. The report notes elevated turbidity because of unpaved site and heavy machinery, elevated zinc and copper and noted possible sources. The report claims corrective actions done in January 2011 included updating SWPPP, straw bales, silt fences, placement of rocks to reduce erosion.

The annual report submitted by Samson for 2011 (submitted on May 11, 2012) does not include the required information. For example, the report does not describe all of the stormwater problems identified or identify the conditions triggering the need for Level Two and Level Three corrective actions.

The annual report submitted by Samson for 2012 (submitted on May 10, 2013) does not include the required information. The report does not describe any stormwater problems or benchmark exceedances. The report does not describe the completion or status of the Level Two and Level Three corrective actions triggered in prior years. The report also fails to include the information required by Condition S8.D.4 of the 2010 Permit for Level Three Corrective Actions.

The annual report submitted by Samson for 2013 (submitted on May 5, 2014) does not include the required information. The report claims no benchmark exceedances and does not

describe any stormwater problems. The report does not describe the completion or status of the Level Two and Level Three corrective actions triggered in prior years.

Samson failed to submit an annual report for 2014, a year in which the facility had significant benchmark exceedances and received an enforcement letter from the Department of Ecology.

The annual report submitted by Samson for 2015 (submitted April 26, 2016) does not include the required information. The report was improperly submitted as a Word document and is not signed or dated. The report notes benchmark exceedances but does not describe any stormwater problems, causes of the exceedances or corrective actions. The report also fails to include the information required by Condition S8.D.4 of the Permits for Level Three Corrective Actions.

VI. VIOLATIONS OF THE RECORDKEEPING REQUIREMENTS.

A. Failure to Record Information.

Condition S4.B.3 of the Permits requires Samson record and retain specified information for each stormwater sample taken, including the sample date and time, a notation describing if Samson collected the sample within the first 30 minutes of stormwater discharge event, an explanation of why Samson could not collect a sample within the first 30 minutes of a stormwater discharge event, the sample location, method of sampling and of preservation, and the individual performing the sampling. Upon information and belief, Samson is in violation of these conditions as it has not recorded each of these specified items for each sample taken during the last five years.

B. Failure to Retain Records.

Condition S9.C of the Permits requires Samson to retain for a minimum of five years a copy of the Permits, a copy of Samson's coverage letter, records of all sampling information, inspection reports including required documentation, any other documentation of compliance with permit requirements, all equipment calibration records, all BMP maintenance records, all original recordings for continuous sampling instrumentation, copies of all laboratory results, copies of all required reports, and records of all data used to complete the application for the Permits. Upon information and belief, Samson is in violation of these conditions because it has failed to retain records of such information, reports, and other documentation during the last five years.

VII. PROHIBITED DISCHARGES.

Condition S5.E. of the Permits prohibits illicit discharges and the discharge of process wastewater. Appendix 2 of the Permits defines "illicit discharges" to include "any *discharge* that is not composed entirely of *stormwater* except (1) discharges authorized pursuant to a separate NPDES permit, or (2) conditionally authorized non-stormwater discharge identified in Condition S5.D." Appendix 2 of the Permits defines stormwater as "that portion of

precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility." In contrast to stormwater, Appendix 2 of the Permits defines leachate as "water or other liquid that has percolated through raw material, product, or waste and contains substances in solution or suspension as a result of the contact with these materials," and process wastewater as "any non-stormwater which, during manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product."

On information and belief, Samson has violated and continues to violate these conditions due to its non-stormwater discharges from the Facility. These non-stormwater discharges from the Facility may include, but are not limited to, track-out from vehicles leaving the site and discharges of wash water from the wheel wash and/or other equipment washing areas.

VIII. REQUEST FOR SWPPP.

Pursuant to Condition S9.F of the 2015 Permit, Soundkeeper hereby requests that Samson Inc. provide a copy of, or access to, its SWPPP complete with all incorporated plans, monitoring reports, checklists, and training and inspection logs within 14 days. The copy of the SWPPP and any other communications about this request should be directed to the undersigned at the letterhead address.

Should Samson fail to provide the requested complete copy of, or access to, its SWPPP as required by Condition S9.F of the 2015 Permit, it will be in violation of that condition, which violation shall also be subject to this Notice of Intent to Sue and any ensuing lawsuit.

IX. CONCLUSION.

The above-described violations reflect those indicated by the information currently available to Soundkeeper. These violations are ongoing. Soundkeeper intends to sue for all violations, including those yet to be uncovered and those committed after the date of this Notice of Intent to Sue.

Under Section 309(d) of the CWA, 33 U.S.C. § 1319(d), each of the above-described violations subjects the violator to a penalty of up to $37,500 per day for each violation. In addition to civil penalties, Soundkeeper will seek injunctive relief to prevent further violations under Sections 505(a) and (d) of the CWA, 33 U.S.C. § 1365(a) and (d), and such other relief as is permitted by law. Also, Section 505(d) of the CWA, 33 USC § 1365(d), permits prevailing parties to recover costs, including attorney's fees.

Soundkeeper believes that this NOTICE OF INTENT TO SUE sufficiently states grounds for filing suit. Soundkeeper intends, at the close of the 60-day notice period, or shortly thereafter, to file a citizen suit against Samson under Section 505(a) of the Clean Water Act for the violations described herein.

Soundkeeper is willing to discuss effective remedies for the violations described in this letter and settlement terms during the 60-day notice period. If you wish to pursue such discussions in the absence of litigation, we suggest that you initiate those discussions within ten (10) days of receiving this notice so that a meeting can be arranged and so that negotiations may be completed promptly. We do not intend to delay the filing of a complaint if discussions are continuing when the notice period ends.

Very truly yours,

SMITH & LOWNEY, PLLC

By: Meredith A. Crafton

Knoll D. Lowney
Meredith A. Crafton

cc: Gina McCarthy, Administrator, U.S. EPA
Dennis McLerran, Region 10 Administrator, U.S. EPA
Maia Bellon, Director, Washington Department of Ecology
Registered Agent, Gerald Morgan, 6361 1st Ave S, Seattle WA 98108

DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, U.S. ARMY GARRISON FORT WAINWRIGHT
1045 MARKS ROAD #6000
FORT WAINWRIGHT, ALASKA 99703-6000

REPLY TO
ATTENTION OF:

May 13, 2016

SUBJECT: Letter from the Environmental Protection Agency to the Army Regarding Operable Unit 5 Open Burn/Open Detonation, dated March 29, 2016

RECEIVED ON:

JUN 07 2016
AWT
EPA Region 10
Office of the Regional Administrator

Mr. Dennis McLerran
Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140
mclerran.dennis@epa.gov

Dear Mr. McLerran:

The Army appreciates the Environmental Protection Agency, Region 10's (EPA) March 29, 2016 letter responding to the Army's February 1, 2016 letter regarding closure of the Operable Unit (OU) 5 Open Burn/Open Detonation (OB/OD) area. The Army also appreciates your sensitivity to its mission requirements and the difficulties raised by conducting closure of the OU5 OB/OD area located within an operational range.

The Army understands and shares EPA's concerns regarding protection of human health and the environment, and the need to maintain effective institutional controls to limit public access to operational ranges. As referenced in the Army's letter and the EPA's response, the five-year review for the OU5 OB/OD is due in September 2016. As required by the OU5 Record of Decision under the Comprehensive Environmental Response, Compensation, and Liability Act, the Army is evaluating the protectiveness of controls that have been implemented at the site as part of the September 2016 five-year review. The Army anticipates submitting this draft five-year review report to the EPA in June 2016. This report will discuss:

a. Enhanced Institutional Controls. The access controls in place prior to the discovery of the Tanana River Site have now been enhanced. Fort Wainwright's current controls include:

(1) Patrols conducted by Range Control personnel that have been increased to at least weekly.

(2) The placement of added signage along the perimeter of the impact area that includes the Tanana River site and OU5 OB/OD to warn people both of the potential explosive hazards associated with the impact area and that the impact area is restricted.

(3) The conduct of periodic inspections of signage.

(4) The addition of a gate to prohibit entry by the road leading to the Tanana River site and OU5 OB/OD.

(5) A requirement, when the operational range is in use, to check daily the flood control dike and the access road constructed to provide access for the removal of the Tanana River burial site and a staging area near the OU5 OB/OD. This operational range is normally active Monday through Friday each week.

b. Recent geophysical data. Attached for the EPA's review is a geophysical survey report of visual inspections and geophysical work conducted within or near the OU5 OB/OD area in the spring of 2015. The Army conducted this work to allow for construction of the access road to the Tanana River site and evaluation of a location for a staging area. This report supports the conclusion that the OU5 OB/OD area presents risks no different from the rest of the operational range area and was not used for burial of munitions and munitions debris.

c. Removal of access road. Once the removal action at the Tanana River site is completed, the Army will remove the access road that was hardened to provide access for the heavy equipment needed to conduct the removal action. Areas that were cleared will once again be undisturbed, but for the patrols and periodic inspections to be conducted by range control personnel and the environmental staff, respectively.

The Army shares the EPA's concerns over potential risks posed to trespassers by historical and ongoing activities on its operational ranges. The Army has increased access controls for the OU5 OB/OD and the remainder of Fort Wainwright's operational range. The Army continues to assess the protectiveness of the current institutional controls for OU5 in the ongoing five-year review and anticipates that it will support a continued delay in the Resource Conservation and Recovery Act (RCRA) closure of the OU5 OB/OD, because it is located on an operational range and enhanced controls are in place to limit both authorized and unauthorized access to the range area. Additionally, the OU5 OB/OD poses no greater risks than the rest of the operational range. Instead, it has been shown to pose very little risk based on past investigations and recent inspections and surveys. The Army will continue to use the operational range for live-fire training, which may result in the deposition of unexploded ordnance in the area of the OU5 OB/OD. RCRA closure of the OU5 OB/OD before use of the operational range ceases will adversely affect range training and will be technically complex with little, if any, demonstrable environmental benefit. Therefore, the basis for deferred closure of the OU5 OB/OD should remain valid.

As indicated in the past, the Army is willing to meet to discuss and resolve any concerns regarding the OU5 OB/OD area. If you have questions or concerns, please contact the Mr. Joe Malen, Directorate of Public Works, Remedial Project Manager at (907) 361-4512, email joseph.s.malen.civ@mail.mil, or you may contact Mr. Brian Adams, Directorate of Public Works, Remedial Project Manager at (907) 361-6623, email brian.m.adams18.civ@mail.mil.

Sincerely,

Sean C. Williams
Colonel, U.S. Army
Commanding

cc via email:
Jan Hastings, USEPA, Region 10, Seattle WA
Jan Palumbo, USEPA, Region 10, Seattle WA
Sandy Halstead, USEPA, Region 10, Anchorage, AK
Joan Shirley, USEPA, Region 10 Seattle, WA
Dennis Shepard, ADEC, Fairbanks, AK
Kim DeRuyter, ADEC, Fairbanks, AK
Guy Warren, ADEC, Anchorage, AK

Safety Clearance Survey to Support the Evaluation of the Proposed Staging Area for the Tanana River Burial Pit Removal Action

Summary Report June 2015

A Report to U.S. Army Alaska, Public Works

from

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
Building 4070 Fort Wainwright, Alaska
P.O. Box 35170 Fort Wainwright, Alaska 99703-0170
Phone: 907-361-5459 Fax: 907-361-5142

Anna M. Wagner, Stephanie P. Saari, and Arthur B. Gelvin

ERDC
Engineer Research and Development Center

CRREL

INTRODUCTION

The purpose of this work was to evaluate the location of a staging area to support the Tanana River Burial Pit Removal Action in the fall of 2015 by assessing whether potential explosive hazards are present within the planned staging area that is within an operational range. The staging area was proposed to be located nearby the Tanana River Burial Pit Removal Site (TRBPRS). At the TRBPRS, soil and metal removal operations will be conducted within the active small-arms complex impact area, within a historic impact area, and approximately 300 m (1,000 ft) from a site that was reportedly used for open-burn/open detonation operations from the mid-1960s to the mid-1980s (OU5 OB/OD Area). The OU5 OB/OD Area is also within the active small-arms complex impact area and a historic impact area. The area being evaluated for staging is located near or in the unmarked OU5 OB/OD Area, approximately 300 m (1,000 ft) north of the Tanana River (Figure 1) and adjacent to a relatively large gravel material source lake developed in the 1970s. A sketch of this area from the Interim Closure Plan for the OU5 OB/OD Area (U.S. Corps of Engineers, 1999) is shown in Figure 2.

The scope of work included using non-intrusive geophysical methods to assist with mapping metallic debris in and around the TRBPRS staging area using an electromagnetic (EM) geophysical exploration method. A site overview map showing general location and the evaluation area is shown in Figure 1. It had been determined that vegetation clearance was required for an area only containing low brush and secondary trees. This resulted in an EM survey area of approximately 4,000 m^2 (2 acres). Coordinates for established boundary corners of the EM survey area are listed in Table 1.

As detailed below, no unexploded ordnance (UXO) or discarded military munitions were discovered in the area surveyed. Based on the EM survey, the conclusion is that the area is considered safe for use as a staging area for future removal actions at TRBPRS.

METHODS

A Geonics EM61-MK2 electromagnetic time-domain metal detector was used for detecting metallic debris. Field work was conducted June 9-11 and June 18, 2015. The field work was supported by a Senior UXO Supervisor (SUXOS) from Jacobs Engineering.

A grid was laid out across the area for data collection and assessment. The average distance between our EM exploration lines was on the order of 0.5 meter to 1.5 meters; the largest separation between exploration lines was approximately 3.5 meters. The exploration area and data collection paths are shown visually in Figure 3.

All data was geo-registered to UTM Zone 6 N (WGS 1984) by spatially locating EM responses dynamically during data collection within our study area using a Trimble R8 survey-grade global positioning system (GPS) with reported positional accuracies <2 cm. In addition, static ground control points were established using the same survey equipment. The ground control points

were used as spatial-reference markers during data collection which allowed us the ability to compare and verify the dynamically-collected spatial locations from the EM exploration.

QUALITY CONTROL

Because the intent of this EM survey was not to locate metal debris for removal but to identify any safety hazards to the staging effort only limited quality control (QC) was performed. A QC line was established along the access road during the first day of field work (see Figure 3). EM responses along the QC line were detected making this line sufficient to serve for QC purposes to quantify static and dynamic background geophysical noise and quantify data repeatability for the EM61-MKII instrument. The QC area was targeted for repeat data collections as a means of evaluating the ability of the instrument to respond consistently and evaluate to GPS positional accuracy. In general, static and dynamic noise from Channel 3 was relatively low and the instrument produced similar responses each day; the background responses ranged from one to five millivolts (mV) suggesting data quality and repeatability are acceptable. A plot of responses taken along the QC line each day is shown in Figure 3. Similar responses were detected during each survey as indicated by the relative peaks visible in the plot. Response differences each day over the metal debris (relative peaks in the plot) along the QC line are likely due to slight changes in line position during QC checks. Variations could also have been related to external environmental differences such operator clothing or external cabling configurations. In general, the data indicate similar elevated responses in similar locations each day, indicating quality, repeatable responses each day.

RESULTS

During this safety survey Cold Regions Research Engineering Laboratory (CRREL) identified and mapped surface and subsurface metallic debris using a non-intrusive electromagnetic (EM) geophysical exploration method. Prior to tree and brush removal metallic debris was observed (e.g., razor wire, shot gun casings, and miscellaneous metal objects) on the ground surface suggesting miscellaneous metallic debris could be present at or just below the ground surface. This area is also a part of an operational small-arms range complex where metallic debris is a result of training exercises. Examples of metallic debris observed on the ground surface are shown in the project photograph log (See Appendix A).

EM61-MKII results for Channel-3 are shown in Figure 4. The results indicate few relatively small localized higher-response anomalies associated with subsurface metallic debris. Responses from these anomalies were generally on the order of 500 mV or less with some locations exhibiting responses on the order of 2,500 mV or less with no discernible pattern.

A relatively large, higher response anomaly near the bank of the material source lake was identified. This feature is outlined in Figure 4 and identified in photograph 10 in the photo log. The response from this anomaly was on the order of 5,000 – 10,000 mV which indicates a larger

buried metallic object. A rectangular box-shaped buried metallic object identified by Jacob's as most likely used as a target (see Photograph 10 in the photo log) was found at this location. These types of targets are commonly used during training and are often encountered at operational small-arms range complexes. With larger bodies of buried metal such as this, transition effects likely influence responses when approaching and departing this type of targets; the response would begin to increase as the instrument approaches the target, with the highest response developed when the instrument is directly over the target. This zone of influence could extend out 2 to 3 m (7 to 10 ft) on either side of larger targets, which suggests this higher-response anomaly is smaller than the area indicated on Figure 4.

In summary, the EM survey detected a few relatively small localized higher-response anomalies scattered across the two acres site indicating shallow subsurface metallic debris. This is consistent with the current use of the area as a target area, random surface metallic debris and several large depressions were observed across the site. We also observed several depressions with the largest one up to 6 m (3 to 20 ft) across and approximately 1 m (3 ft) deep. Not all depressions were surveyed and identification of depressions was difficult due to the brush litter from clearance of trees and brush. No UXO or discarded military munitions were discovered in the area surveyed. Based on the EM survey, the conclusion is that the area is considered safe for use as a staging area for future removal actions at TRBPRS.

REFERENCES

Martin, A. W., Felt, D. R., & Larson, S. L. (2012). *Open Burn/Open Detonation (OBOD) Area Management Using Lime for Explosives Transformation and metals Immobilization* (No. ERDC-TR-12-4). Engineer Research and Development Center, Vicksburg, MS.

U.S Corps of Engineers (1999) *DRAFT Operable Unit 5 OB/OD Area Fort Wainwright, Alaska. Interim Closure Plan*, August 1999, Contract No. DACA85-95-D-0015 Delivery Order 25 Modification 3.

Figure List

Table List

Appendix A

Site Overview Map

Aerial Photograph, Summer 2012

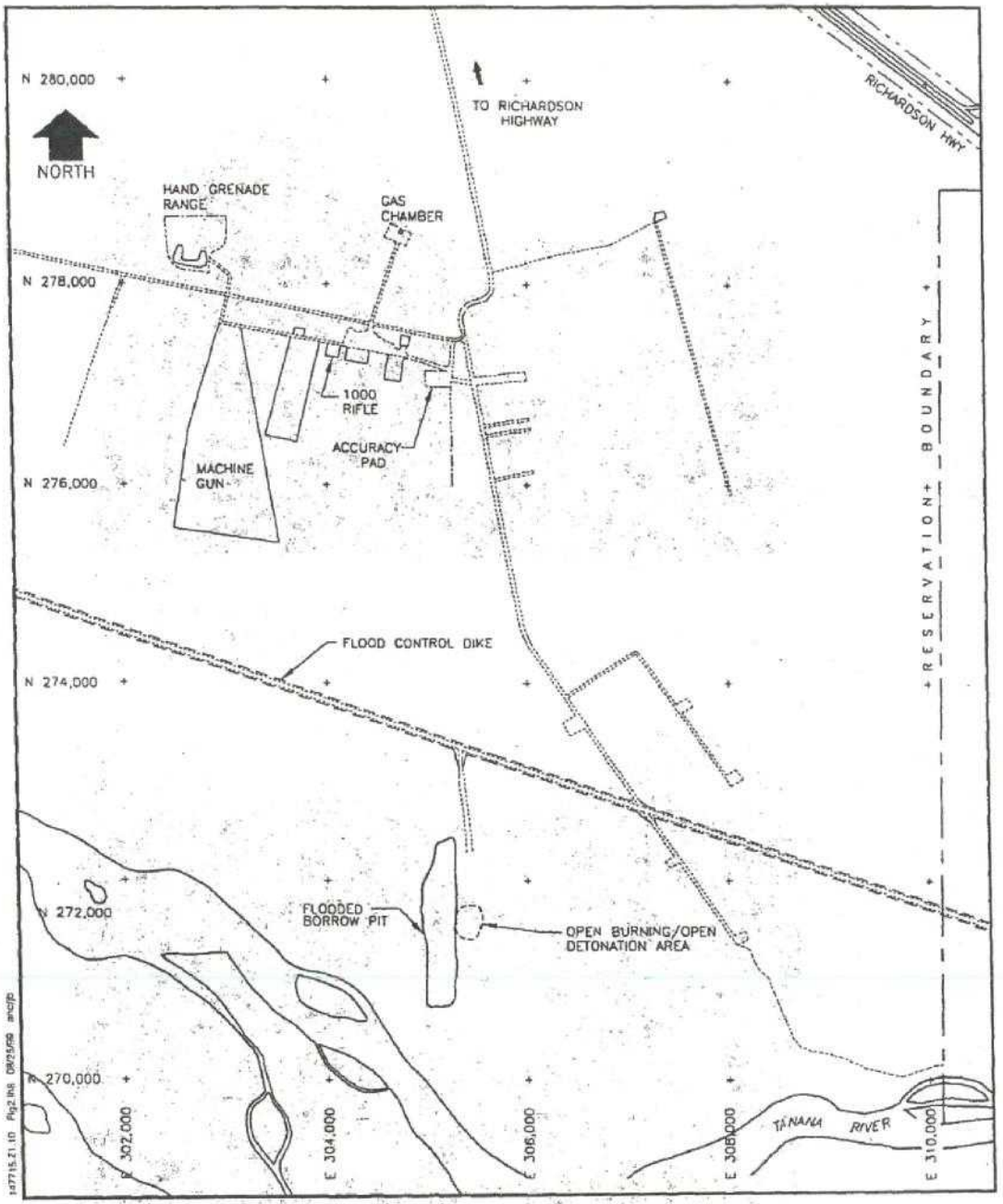
ERDC-CRREL/USAGAK
Ft. Wainwright, AK

US Army Corps of Engineers

0 0.5 1
Kilometers
PROJECTION: WGS84 UTM Zone 6N

DATE: June 26, 2015

Figure 1



Source: *OU 5 Remedial Investigation*, Figure 1-11 OB/OD Area Site Plan, Harding Lawson Associates, 1996.

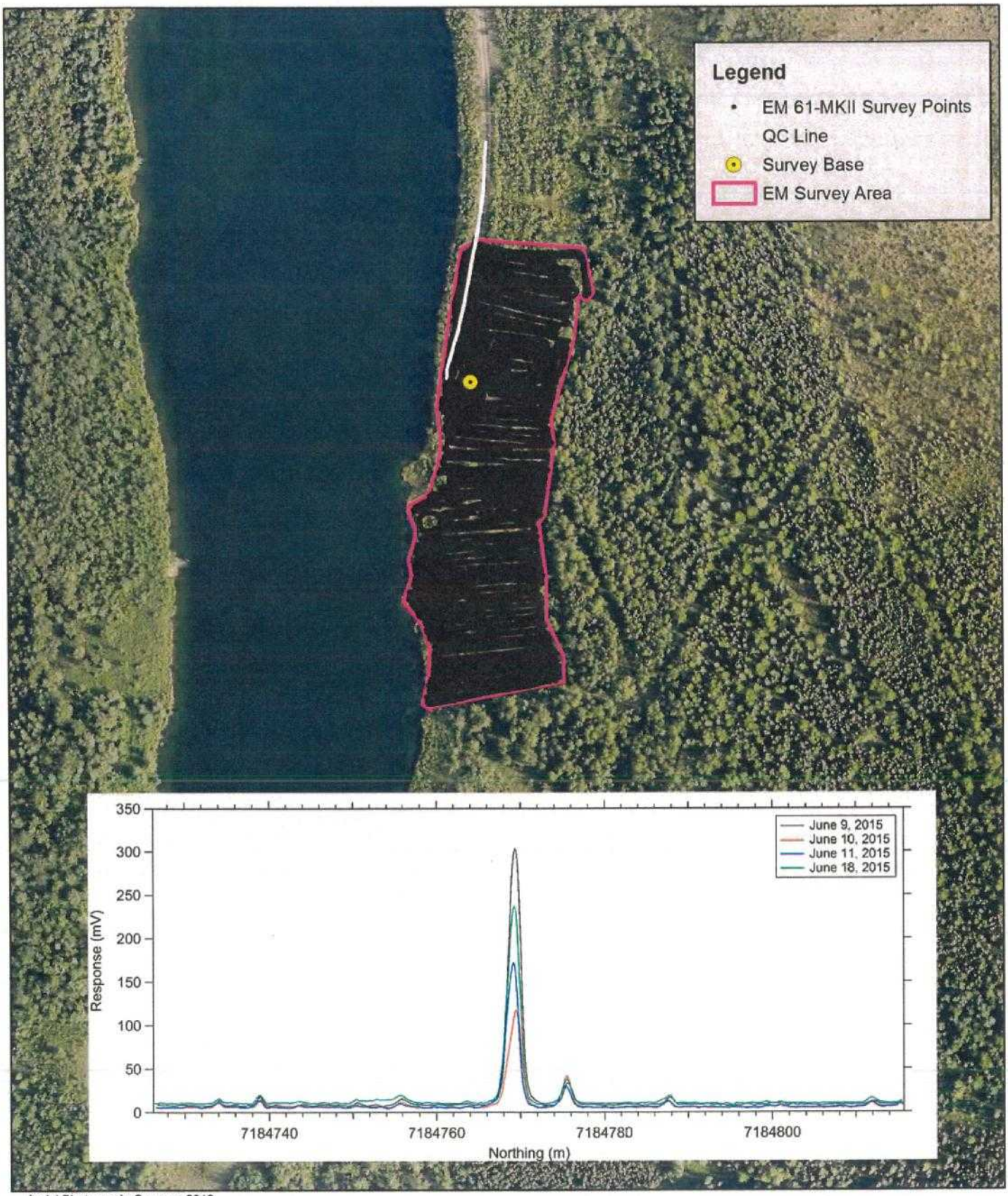
Figure 2

OB/OD Area Location

OB/OD Area, OU5, Fort Wainwright, Alaska

DRAFT 1

Survey Close-up Map and QC Results



Aerial Photograph, Summer 2012

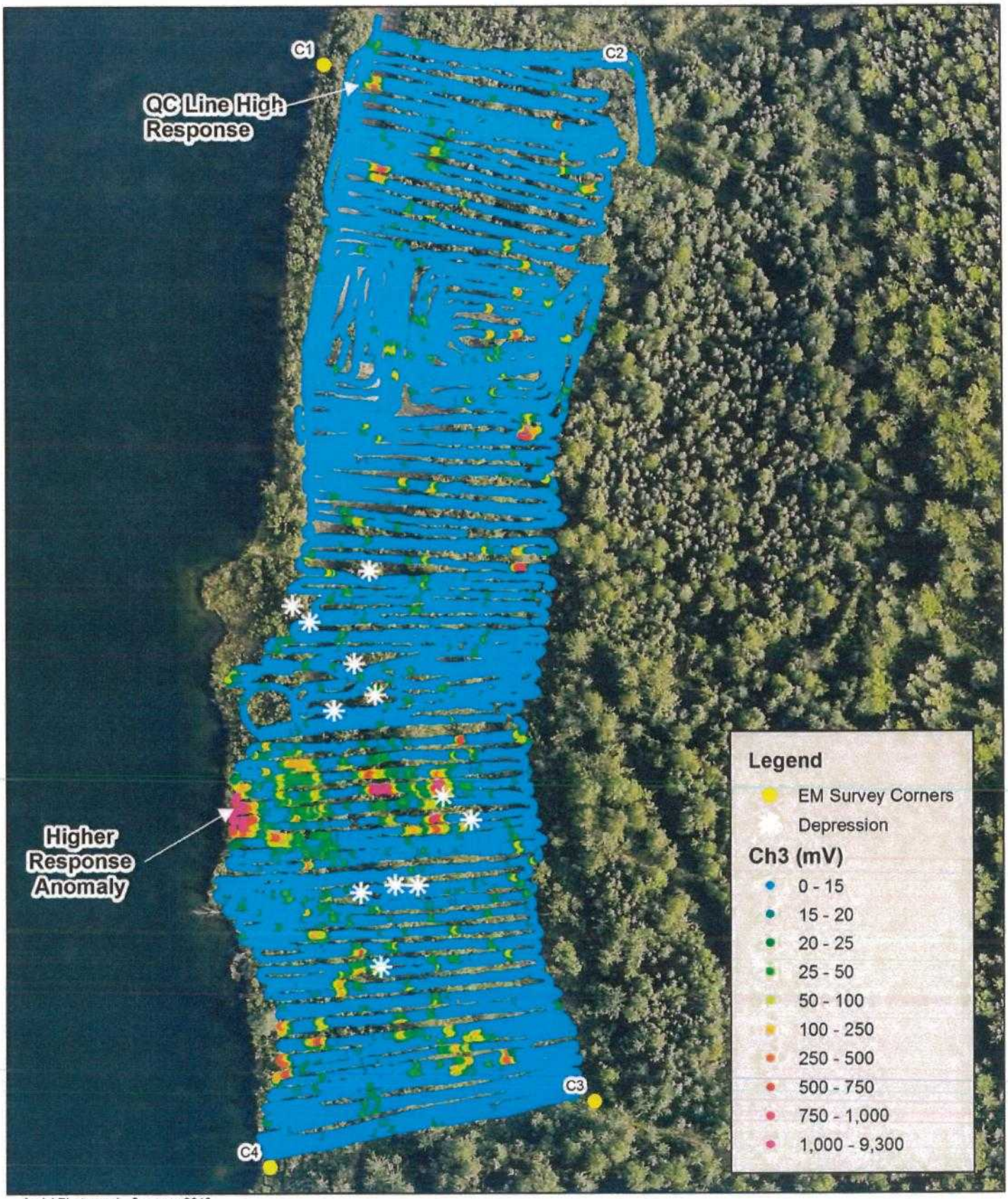
ERDC-CRREL/USAG AK
Ft. Wainwright, AK

0 50 100
Meters
PROJECTION: WGS84 UTM Zone 6N

DATE: June 26, 2015

Figure 3

EM61-MKII Channel 3 Results



Aerial Photograph, Summer 2012

ERDC-CRREL/USAG AK
Ft. Wainwright, AK

0 25 50
Meters
PROJECTION: WGS84 UTM Zone 6N

DATE: June 26, 2015

Figure 4

Table 1
Summary Table of evaluation area boundary
Corner Coordinates**

Corner Number	Northing*	Easting*
1	7184772.67	471053.72
2	7184772	471102.14
3	7184611	471095.4
4	7184600.82	471044.86

Notes:
Distance from Corner 1 to Corner 2 is approximately 49.14.2 meters
Distance from Corner 2 to Corner 3 is approximately 161.13 meters
Distance from Corner 3 to Corner 4 is approximately 51.4 meters
Distance from Corner 3 to Corner 4 is approximately 171.95 meters
* Coordinates given in WGS 1984 UTM Zone 6N
** Coordinates collected using Trimble R8, survey-grade GPS

APPENDIX A

Safety Clearance Survey to Support the Evaluation of the Proposed Staging Area for the Tanana River Burial Pit Removal Action
Project Photographs

1) Site photo prior to tree and brush removal showing soil material stockpile, looking south.

2) Site photo prior to tree and brush removal, looking north.

3) Site photo during clearing of trees and brush.

4) Site photo after tree and brush removal showing soil material stockpile and survey-grade GPS control point.

5) Site photo after tree and brush removal, looking east.

6) Site photo after tree and brush removal, looking north

7) SUXOS using Schonstedt to clear study area prior to work.

10) Surface/subsurface object identified as a target that yielded the highest response in the survey area.

8) Surface metal debris located within study area.

11) Buried and exposed razor wire within study area.

9) Surface metal debris located within study area.

12) Surveying surface metal debris using survey-grade GPS.

13) Survey base station set over control point on soil material stockpile shown in photograph 4.

16) EM61data collection.

14) EM61 instrument equipped with survey-grade GPS rover.

15) EM61 instrument equipped with survey-grade GPS rover collecting data along site access road.